

WHAT IS CLAIMED IS:

1. A solid-state imaging device having a first color picture cell array which contains picture cells having a photo-electric converting element for converting incident light to electric signals arranged two-dimensionally, and a second color picture cell array which contains picture cells having a photo-electric converting element for converting incident light to electric signals arranged two-dimensionally, placed in juxtaposition, on a substrate, wherein said substrate is provided with a common well being common to the first color picture cell array and the second color picture cell array.
2. The solid-state imaging device according to claim 1, wherein a well-wiring and a well-contact are provided between the first color picture cell array and the second color picture cell array.
3. The solid-state imaging device according to claim 1, wherein an element isolation region is provided between the first color picture cell array and the second color picture cell array.
4. The solid-state imaging device according to claim 1, wherein a light-intercepting member is provided between the first color picture cell array and

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the second color picture cell array.

5. The solid-state imaging device according to claim 1, wherein the photo-electric converting element is a photodiode, the picture cell has plural transistors of an insulating gate type, the common well provides a first conductivity type semiconductor region for an anode or a cathode of the photodiode, and each first conductivity type well for the plural insulating gate type transistors.

6. The solid-state imaging device according to claim 1, wherein the photo-electric converting element is a photodiode, and the common well provides a first conductivity type semiconductor region for an anode or a cathode of the photodiode, and a well for formation of a charge transfer channel of CCD.

7. The solid-state imaging device according to claim 1, wherein a third color picture cell array is additionally provided so as to have said common well which array contains picture cells having a photo-electric converting element for converting incident light to electric signals arranged two-dimensionally.

8. The solid-state imaging device according to claim 1, wherein the color picture cell arrays have

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respective common color filters on the photo-electric converting elements.

5 9. The solid-state imaging device according to claim 8, wherein the common color filter is a color filter of red, green, or blue.

10 10. The solid-state imaging device according to claim 1, which has a terminal for connection with a power source for supplying a voltage for generating a reference voltage for the common well from an outside of the solid-state imaging device.

15 11. A solid-state imaging device having a first color picture cell array which contains picture cells having a photo-electric converting element for converting incident light to electric signals arranged two-dimensionally, and a second color picture cell array which contains picture cells having a photo-electric converting element for converting incident light to electric signals arranged two-dimensionally, placed in juxtaposition on a substrate, wherein said solid-state imaging device has between the first color picture cell array and the second color picture cell array a well-contact and a well-wiring for applying a reference voltage to a common well common to the first color picture cell array and the second color picture

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12. The solid-state imaging device according to claim 11, wherein the well-wiring is formed from a light-intercepting material to intercept the incident light upon the common well region between the first color picture cell array and the second color picture cell array.

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the second color picture cell array.

5 17. The solid-state imaging device according to  
claim 11, wherein the photo-electric converting element  
is a photodiode, the picture cell has plural  
transistors of an insulating gate type, the common well  
provides a first conductivity type semiconductor region  
for an anode or a cathode of the photodiode, and each  
first conductivity type well for the plural insulating  
10 gate type transistors.

15 18. The solid-state imaging device according to  
claim 11, wherein the photo-electric converting element  
is a photodiode, and the common well provides a first  
conductivity type semiconductor region for an anode or  
a cathode of the photodiode, and a well for formation  
of a charge transfer channel of CCD.

20 19. The solid-state imaging device according to  
claim 11, wherein a third color picture cell array is  
additionally provided which array contains picture  
cells having a photo-electric converting element for  
converting incident light to electric signals arranged  
two-dimensionally.

25 20. The solid-state imaging device according to  
claim 11, wherein the color picture cell arrays have

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respective common color filters on the photo-electric converting elements.

21. A solid-state imaging device having a first  
5 color picture cell array which contains picture cells  
having a photo-electric converting element for  
converting incident light to electric signals arranged  
two-dimensionally, a second and third picture cell  
arrays which respectively contain picture cells having  
10 a photo-electric converting element for converting  
incident light to electric signals arranged two-  
dimensionally, and a fourth color picture cell array  
which contains picture cells having a photo-electric  
converting element for converting incident light to  
15 electric signals arranged two-dimensionally, placed in  
juxtaposition on a substrate,  
wherein the first color picture cell array and the  
fourth color picture cell array are placed in a  
diagonal relation, and the second color picture cell  
20 array and the third color picture cell array are placed  
in another diagonal relation; and  
said solid-state imaging device has between the first  
color picture cell array and the second color picture  
cell array a well-contact and a well-wiring for  
25 applying a reference voltage to a common well common to  
at least the first color picture cell array and the  
second color picture cell array.

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22. The solid-state imaging device according to claim 21, wherein the well-wiring is formed from a light-intercepting material to intercept the incident light upon the common well region between the first color picture cell array and the second color picture cell array.

23. The solid-state imaging device according to claim 22, wherein the light-intercepting material is a metal mainly comprised of aluminum or copper.

24. The solid-state imaging device according to claim 21, wherein an anti-reflection layer is formed on or above the well-wiring to prevent reflection of the incident light.

25. The solid-state imaging device according to claim 24, wherein a main component of the anti-reflection layer is selected from the group consisting of titanium nitride, tantalum nitride, tungsten nitride and tungsten.

26. The solid-state imaging device according to claim 21, wherein a plurality of the well-contacts are formed between the first color picture cell array and the second color picture cell array.

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27. The solid-state imaging device according to claim 21, wherein the photo-electric converting element is a photodiode, the picture cell has plural transistors of an insulating gate type, the common well provides a first conductivity type semiconductor region for an anode or a cathode of the photodiode, and each first conductivity type well for the plural insulating gate type transistors.

28. The solid-state imaging device according to claim 21, wherein the photo-electric converting element is a photodiode, and the common well provides a first conductivity type semiconductor region for an anode or a cathode of the photodiode, and a well for formation of a charge transfer channel of CCD.

29. The solid-state imaging device according to claim 21, wherein a third color picture cell array is additionally provided which array contains picture cells having a photo-electric converting element for converting incident light to electric signals arranged two-dimensionally.

30. The solid-state imaging device according to claim 21, wherein the color picture cell arrays have respective common color filters on the photo-electric converting elements.

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comprising a solid-state imaging device set forth in  
claim 1, and a power source for supplying a voltage for  
generating a reference voltage for the well-wiring of  
the solid-state imaging device from an outside of the  
5 solid-state imaging device.

36. An imaging device for imaging an object,  
comprising a solid-state imaging device set forth in  
claim 1, and a focusing lens for focusing an image of  
10 an object on the color picture cell arrays.

37. An imaging device for imaging an object,  
comprising a solid-state imaging device set forth in  
claim 11, and a power source for supplying a voltage  
15 for generating a reference voltage for the well wiring  
of the solid-state imaging device from an outside of  
the solid-state imaging device.

38. An imaging device for imaging an object,  
20 comprising a solid-state imaging device set forth in  
claim 11, and a focusing lens for focusing an image of  
an object on the color picture cell arrays.

39. An imaging device for imaging an object,  
25 comprising a solid-state imaging device set forth in  
claim 21, and a power source for supplying a voltage  
for generating a reference voltage for the well wiring

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of the solid-state imaging device from an outside of  
the solid-state imaging device.

40. An imaging device for imaging an object,  
5 comprising a solid-state imaging device set forth in  
claim 21, and a focusing lens for focusing an image of  
an object on the color picture cell arrays.

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